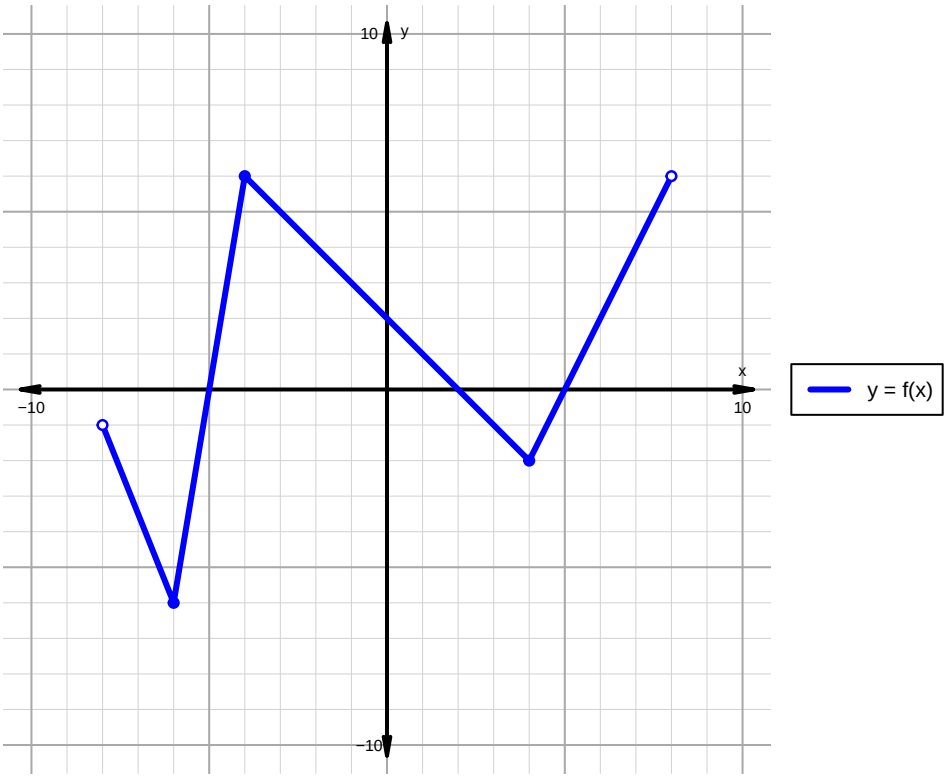
Name: Date:

Intervals, Transformations, and Slope Solution (version 118)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-5, 2) \cup (5, 8)$
Negative	$(-8, -5) \cup (2, 5)$
Increasing	$(-6, -4) \cup (4, 8)$
Decreasing	$(-8, -6) \cup (-4, 4)$
Domain	$(-8, 8)$
Range	$(-6, 6)$

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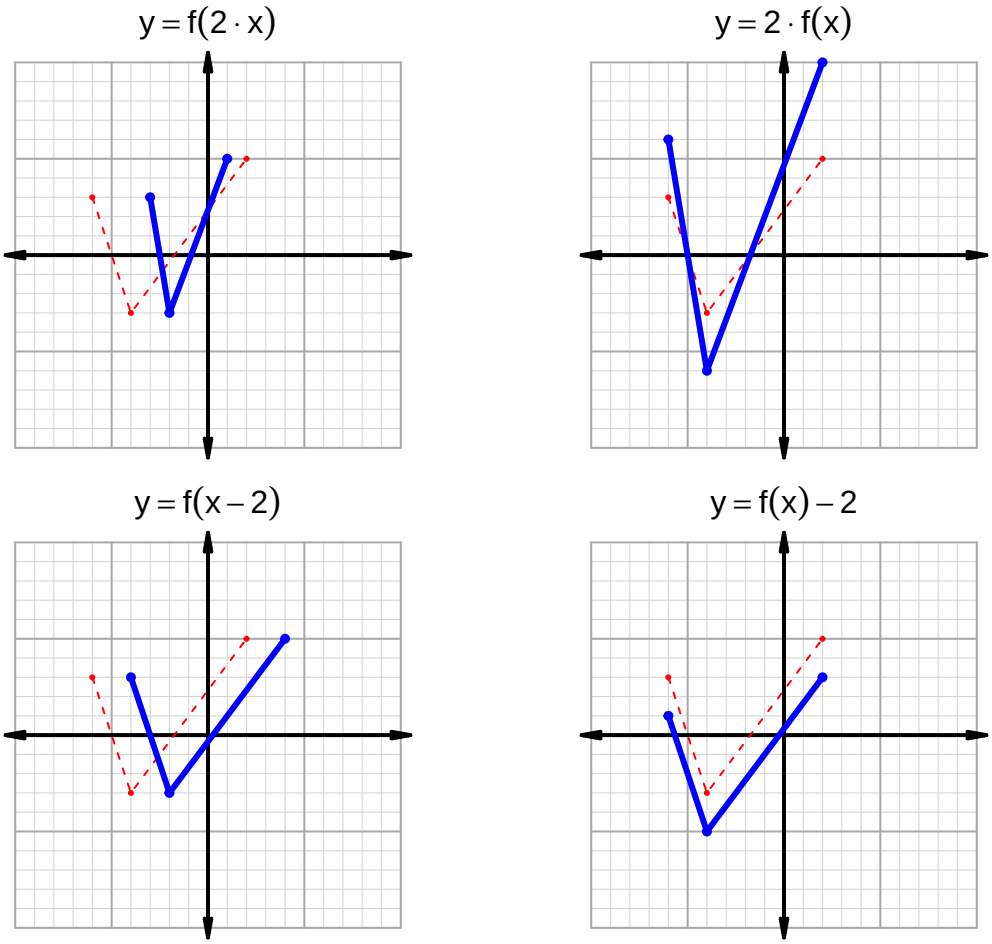
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 31$ and $x_2 = 37$. Express your answer as a reduced fraction.

x	$g(x)$
10	31
24	37
31	24
37	10

$\frac{f(37)-f(31)}{37-31} = \frac{10-24}{37-31} = \frac{-14}{6}$

The greatest common factor of -14 and 6 is 2. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-7}{3}$$